

Remarks

The Examiner objected to the abstract because of the use of the term "novel". Applicant has amended the abstract to avoid use of the word "novel".

The Examiner indicated that Figure 6 should be labelled as "prior art". Figure 6 has been so amended in the proposed drawing correction enclosed herewith. Approval is requested following which Applicant will submit a new formal drawing.

The Examiner rejected claims 20-22 as being indefinite. Applicant has amended claims 20-22 to refer to a forefoot radial geometry region for which support may be found in paragraphs [0049] and [0052] in the application "as published" and in Figure 9.

The Examiner rejected claims 1-3 as being anticipated by U.S. Patent No. 5,317,819 ("Ellis").

Applicant notes that the outsole/midsole configuration proposed by Ellis does not provide for a constant radius to be developed about the axis of rotation of the calcaneus as shown in Figure 5 at reference 12 in the present application. In contrast, Ellis is advocating a sole of constant thickness which follows the natural contour of a wearer's foot. This aspect of Ellis is reiterated over and over again throughout the Ellis reference. See for example column 5 at around line 63 which states that:

"it is thus a main feature of the applicant's invention to eliminate the unnatural sharp bottom edge, especially of flared shoes, in favor of a naturally contoured shoe sole outside 31 as shown in Fig. 3. The side or inner edge 30a of the shoe sole stability side 28a is contoured like the natural form on the side or edge of the human foot, as is the outside or outer edge 31a of the shoe sole stability side 28a to follow a theoretically ideal stability plane. According to the invention, the thickness(s) of the shoe sole 28 is maintained exactly constant, even if the shoe sole is tilted to either side, or forward or backward."

The radius characteristics as shown by Ellis still provide areas in the lateral and medial outermost edge of the midsole that exceed the radius when measured directly between the calcaneus centre of rotation. Although there is a radius present, there is still a lever arm effect

created and thus excess and potentially harmful torque and acceleration are created as the foot contacts the ground and moves into the mid stance phase of gait.

From the sagittal plane, there is not a curvature present in Ellis that is consistent with a uniform radius being drawn using the sagittal plane axis of rotation of the calcaneus as its central point.

The Examiner made reference to U.S. Patent No. 4,030,213 (Daswick) stating that Daswick teaches a midsole heel structure with convex (compound) curvature.

Applicant has amended the claims to combine the features previously set out in former claims 1 and 2 (presented as claim 2). specifying the nature and location of the convex curvature. Applicant respectfully submits that for the reasons set out above, such an arrangement is not anticipated by Ellis. Claim 3 which depends from claim 2 further defines the curvature and accordingly still further distinguishes from Ellis.

The Examiner made reference to U.S. Patent No. 4,030,213 (Daswick) however did not specifically state that any of the claims were anticipated by Daswick. As the Examiner made reference to Daswick, Applicant will comment in reply.

As with Ellis, Daswick fails to illustrate any effort to define the centre of rotation of the calcaneus both in the frontal and sagittal plane. Because of this the radius nature of the sole provided by Daswick is still capable of creating moment arms and leverage about the calcaneal centre of rotation thus producing potentially torques and accelerations during the yield strike phase of gait. To eliminate changes in touch down velocity as the foot comes to rest, which contribute to the accelerations and torques, it is important that the radius be constant and dependent upon its centre being alignable with the calcaneus axis of rotation and centre of mass.

The Examiner rejected claims 4, 5, 7/4, 7/5, 8 and 9 as being obvious in view of Ellis and U.S. Patent No. 6,098,313 (Skaja). The Examiner states that Skaja teaches a region of enhanced flexibility.

Applicant respectfully points out that it is not merely "a region of enhanced flexibility" which is provided by Applicant's invention but rather, such a region within a specific zone of the insole. In particular, the location of the flex lines and nature of their curvature of Skaja do not fall within

the area defined by Applicant's claims. Accordingly, the nature of the curvature of the Skaja flex lines are not consistent with the shape and angle of the Metatarsal Phalangeal Joint of the foot. Because of this, a conflict in shoe and foot flexing will be created thus producing potential harmful forces and discomfort. Such an inappropriate location and shape are clearly shown in Figures 3 and 4 of Skaja.

The Examiner rejected claims 10/1, 10/2 and 10/3 as being obvious in view of Ellis and U.S. Patent No. 5,404,659 (Burke). The Examiner states that it would have been obvious to incorporate the catalyst of Burke into the invention of Ellis for the purpose of making the midsole more orthopedically beneficial. The Examiner further states that the height limitation would have been obvious.

The claim 1 dependency has been deleted.

For the reasons set out above, Applicant respectfully submits that amended claim 2 is patentable over Ellis and accordingly claim 10 which adds further restrictive features is also patentable. With respect to the Examiner's comment that the catalyst height limitation would have been obvious, Applicant respectfully disagrees. This reference is extensively discussed in the Applicant's summary of the invention, in particular paragraphs [0005] through [0007] in the published application. Quite clearly the range taught in the Burke patent is outside of a workable range. In particular, the maximum claimed is less than the minimum suggested in the Burke patent. Accordingly, Burke teaches away from the range claimed in the present case.

The Examiner states that claims 10/4, 10/5, 11, 12 and 14 are obvious in view of Ellis in combination with Skaja and Burke. For the reasons set out above, Applicant respectfully submits that claim 2 as amended distinguishes patentably over Ellis and accordingly claims 10/4, 10/5, 11, 12 and 14 which depend from it also patentably distinguish over Ellis. As neither Skaja nor Burke relate to the curvature of the heel region and as Skaja is distinguishable for the reasons as set out above with respect to claims 4, 5, 7/4, 7/5, 8 and 9, Applicant respectfully submits that no combination of Ellis, Skaja and Burke would yield Applicant's invention as defined in claims 10/4, 10/5, 11, 12 and 14 as depending from amended claim 2. Furthermore, as set out above, the ranges taught within Burke are outside of the scope of the present claims.

The Examiner rejected claims 13, 15 and 18-22 as being obvious in view of Ellis, Skaja, Burke and further in view of U.S. Patent No. 1,907,136 (Weitsen) and a reference that the Examiner refers to as "Marc". The Examiner has not provided any further particulars as to the "Marc" reference. Applicant notes that it is not set out in the Notice of References Cited nor does the Examiner provide a patent number.

In any event, claims 13, 15, 18 and 19 depend from amended claim 2 which, for the reasons set out above, Applicant respectfully submits patentably distinguishes over the Ellis, Skaja and Burke references. As nothing in Weitsen is directed at the nature and location of the convex curvature of the heel region, Applicant respectfully submits that claims 13, 15 and 18-20 are patentably distinguishable over the suggested combination. Claims 20 through 22 have been deleted.

Of a more general nature, Applicant respectfully points out that a finding of obviousness requires that there be some teaching in the cited references suggesting that they be combined in a particular way. Applicant submits that it would be extremely unlikely that there be teaching in four or five references suggesting that they could somehow be combined to achieve a new structure and that the new structure would be obvious. The issue is not one of whether enough elements can be found to build Applicant's structure, but rather whether the references actually suggest such a combination. It is respectfully submitted that this clearly is not the case as not only would the combination not yield Applicant's structure, there is no teaching toward the combination.

The Examiner rejected claims 16/1, 16/2 and 16/3 as being obvious in view of Ellis and Marc. Once again, Applicant is not familiar with the Marc reference. A quick search of the U.S. Patent and Trademark Office database for patents naming "Marc" as an inventor and having "shoe" in the title located 21 "hits". As the Examiner is citing Marc with respect to the compressibility of a heel cushion and Applicant accordingly presumes that this has no bearing on the nature of the convex curvature of the heel region as defined by amended claim 1 which is incorporated in claim 16 in all of its variants. Similarly, claims 16/4 and 16/5 and claim 17 patentably distinguish over the suggested combination. The claim 1 dependency has been deleted.

Applicant notes that the Examiner has indicated allowability of claims 6, 7/6, 10/6 and 16/6.

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For all of the reasons set out above, Applicant respectfully submits that the application as amended is in condition for allowance and action toward that goal is respectfully requested.

Respectfully submitted,



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